

Use Attainability Analysis

for

WBID 0912 Davis Creek

Submitted by  
SES, Inc.

to

Missouri Department of Natural Resources  
Water Protection Program

Date received: November 14, 2007

**Field Data Sheets for Recreation Use Stream Surveys**

**Data Sheet A - Water Body Identification**

**I. Water Body Information** (For water body being surveyed)

Water Body Name (from USGS 7.5' quad): Davis Creek	
Missouri Water Body Identification (WBID) Number: 912	
8 digit HUC code: 10300104	County: Lafayette
Upstream Legal Description (from Table H): T48N R28W Sec 13	
Downstream Legal Description (from Table H): T48N R26W Sec 8	
Number of sites evaluated: 6	
List all site numbers, listed consequently upstream to downstream: 1,2,3,4,5,6	

**Site Locations Map(s):** Attach a map of the entire segment with assessment sites clearly labeled.  
Mark any other items that may be of interest.

**II. Facility Information** (list all permitted discharges to the water body segment)

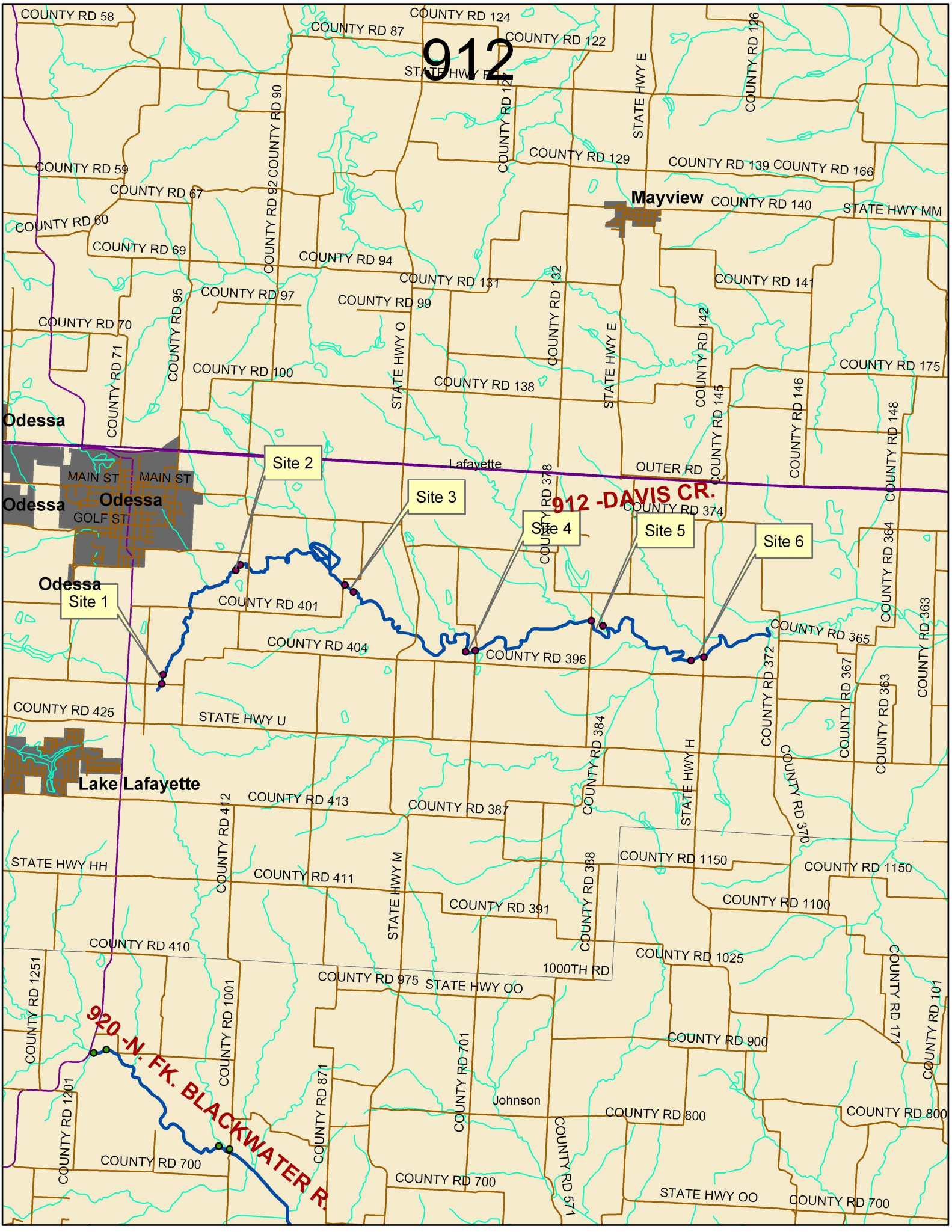
Facility Name(s) and Permit Number(s): Odessa Municipal WWTF MO 0026387
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**III. UAA Surveyor** (please print legibly)

Name of Surveyor: Aaron Ball	Telephone Number: (913)307-0046
Organization/Employer: SES, Inc.	

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

**Signed:** Aaron Ball **Date:** 11.09.07



WBID # 912  
 Site # 1

**Field Data Sheets For Recreational Use Stream Surveys**

**Data Sheet B-Site Characterization**

Date & Time:	10/26/07	11:35	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		Varier Rd.
Current Weather Conditions:	cloudy	Facility Name:	Odessa Municipal WWTF
Weather conditions for the past 10 days:	1.96 inches	Permit Number:	MO 0026387
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

**Site Location:**

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0418080	4313180		4.2	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0418104	4313371		4.2	

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
47	Upstream	48	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed:**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 912  
 Site # 1

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B- Site Characterization (Continued)**

**Surrounding Conditions:**

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: <div align="center">none</div>				

**Evidence of Human Use:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: <div align="center">none</div>				

**Substrate:**

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
				100	

**Aquatic Vegetation:**

N/A
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**Water Characteristics:**

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
N/A					
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 912  
Site # 1

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B - Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Land owner said creek only holds water after major land events.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: Aaron Ball Date of Survey: 10/26/2007

Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Waterbody ID: <u>912</u> Site #: <u>1</u>															<b>Dissolved Oxygen</b>				
Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water)															Date: <u>10/26/07</u> Time: <u>11:35</u>				
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)															Dissolved Oxygen: <u>N/A</u> (mg/L)				
<b>01</b> UTM X: <u>0418080</u> UTM Y: <u>4313180</u> +/- <u>4.2</u> (meters)															Dissolved Oxygen: _____ (% sat)				
<b>11</b> UTM X: <u>0418104</u> UTM Y: <u>4313371</u> +/- <u>4.2</u> (meters)															Specific Cond: _____ (µS/cm)				
Average Stream Width: <u>N/A</u> (meters)                      Length of Survey Segment: <u>150</u> (meters)															Water Temperature: <u>N/A</u> (°C)				
(To determine Length of Reach)                      (20x average stream width)																			
Field Staff: <u>Aaron Ball, Drew Dodson</u>																			

Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
2	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
3	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
4	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
5	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
6	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
7	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
8	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
9	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00	#####	0.00
Right Bank	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00
Feature Type (rifle, run, or pool)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball                      Date: 11.09.07

WBID # 912  
 Site # 2

**Field Data Sheets For Recreational Use Stream Surveys**

**Data Sheet B-Site Characterization**

Date & Time:	10/26/07	10:46	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		Kinnamon Rd.
Current Weather Conditions:	cloudy	Facility Name:	Odessa Municipal WWTF
Weather conditions for the past 10 days:	1.96 inches	Permit Number:	MO 0026387
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

**Site Location:**

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0419626	4315558		5.1	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0419718	4315666		6.6	

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
45	Downstream	46	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed:**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				



WBID # 912  
Site # 2

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B- Site Characterization (Continued)**

**Surrounding Conditions:**

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

**Evidence of Human Use:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

**Substrate:**

% Cobble	% Gravel 10	% Sand	% Silt 30	% Mud/Clay 60	% Bedrock
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**Aquatic Vegetation:**

none
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**Water Characteristics:**

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 912  
Site # 2

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B - Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

none

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: Aaron Ball Date of Survey: 10/26/2007

Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Waterbody ID: <u>912</u> Site #: <u>2</u>  Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0419626</u> UTM Y: <u>4315558</u> +/- <u>5.1</u> (meters) <b>11</b> UTM X: <u>0419718</u> UTM Y: <u>4315666</u> +/- <u>6.6</u> (meters)  Average Stream Width: <u>3</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>Aaron Ball, Drew Dodson</u>	<b>Dissolved Oxygen</b>  Date: <u>10/26/07</u> Time: <u>10:46</u>  Dissolved Oxygen: <u>8.7</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>11</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.1	0.10	0.1	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.5	0.20	0.1	0.05	0.1	0.05	0.2	0.05	0.1	0.05	0.3	0.10
2	0.2	0.15	0.2	0.10	0.2	0.05	0.2	0.05	0.2	0.10	1.0	0.30	0.2	0.05	0.2	0.10	0.4	0.05	0.2	0.10	0.6	0.20
3	0.3	0.20	0.3	0.05	0.3	0.05	0.3	0.10	0.3	0.10	1.5	0.40	0.3	0.05	0.3	0.15	0.6	0.10	0.3	0.10	0.9	0.20
4	0.4	0.20	0.4	0.05	0.4	0.05	0.4	0.05	0.4	0.10	2.0	0.55	0.4	0.05	0.4	0.20	0.8	0.10	0.4	0.10	1.2	0.25
5	0.5	0.15	0.5	0.05	0.5	0.05	0.5	0.10	0.5	0.05	2.5	0.50	0.5	0.05	0.5	0.20	1.0	0.20	0.5	0.10	1.5	0.30
6	0.6	0.15	0.6	0.05	0.6	0.05	0.6	0.10	0.6	0.05	3.0	0.40	0.6	0.05	0.6	0.15	1.2	0.15	0.6	0.10	1.8	0.30
7	0.7	0.10	0.7	0.05	0.7	0.05	0.7	0.10	0.7	0.05	3.5	0.25	0.7	0.05	0.7	0.15	1.4	0.10	0.7	0.10	2.1	0.25
8	0.8	0.10	0.8	0.05	0.8	0.05	0.8	0.05	0.8	0.05	4.0	0.30	0.8	0.05	0.8	0.10	1.6	0.05	0.8	0.05	2.4	0.20
9	0.9	0.05	0.9	0.05	0.9	0.05	0.9	0.05	0.9	0.05	4.5	0.05	0.9	0.05	0.9	0.05	1.8	0.05	0.9	0.05	2.7	0.10
Right Bank	1.0	0.00	1.0	0.00	1.0	0.00	1.0	0.00	1.0	0.00	5.0	0.00	1.0	0.00	1.0	0.00	2.0	0.00	1.0	0.00	3.0	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball      Date: 10.26.07

WBID # 912  
 Site # 3

### Field Data Sheets For Recreational Use Stream Surveys

#### Data Sheet B-Site Characterization

Date & Time:	10/25/07	17:26	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		CR 401
Current Weather Conditions:	Partly cloudy		Facility Name: Odessa Municipal WWTF
Weather conditions for the past 10 days:	1.96 inches		Permit Number: MO 0026387
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

#### Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0421903	4315250	7.5
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0422083	4315103	6.6

#### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
36	Upstream	37	Livestock Watering	38	Downstream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 912  
Site # 3

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B- Site Characterization (Continued)**

**Surrounding Conditions:**

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

**Evidence of Human Use:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock watering
comments/other: none				

**Substrate:**

% Cobble	% Gravel 50	% Sand	% Silt 10	% Mud/Clay 40	% Bedrock
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**Aquatic Vegetation:**

none
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**Water Characteristics:**

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 912  
Site # 3

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B - Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

none

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: Aaron Ball Date of Survey: 10/25/2007

Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Waterbody ID: <u>912</u> Site #: <u>3</u>  Estimated Channel Incision: <u>4.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0421903</u> UTM Y: <u>4315250</u> +/- <u>7.5</u> (meters) <b>11</b> UTM X: <u>0422083</u> UTM Y: <u>4315103</u> +/- <u>6.6</u> (meters)  Average Stream Width: <u>4</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>Aaron Ball, Drew Dodson</u>																Dissolved Oxygen						
Date: <u>10/25/07</u> Time: <u>17:26</u>  Dissolved Oxygen: <u>15.4</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>11.5</u> (°C)																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.3	0.05	0.2	0.05	0.2	0.05	0.2	0.05	0.3	0.10	0.1	0.05	0.3	0.05	0.3	0.10	0.3	0.45	0.4	0.15	0.4	0.05
2	0.6	0.10	0.4	0.05	0.4	0.10	0.4	0.10	0.6	0.10	0.2	0.05	0.6	0.20	0.6	0.10	0.6	0.40	0.8	0.40	0.8	0.10
3	0.9	0.10	0.6	0.05	0.6	0.15	0.6	0.15	0.9	0.15	0.3	0.10	0.9	0.25	0.9	0.15	0.9	0.50	1.2	0.45	1.2	0.20
4	1.2	0.15	0.8	0.05	0.8	0.20	0.8	0.20	1.2	0.20	0.4	0.10	1.2	0.35	1.2	0.15	1.2	0.45	1.6	0.50	1.6	0.20
5	1.5	0.20	1.0	0.50	1.0	0.20	1.0	0.20	1.5	0.25	0.5	0.10	1.5	0.40	1.5	0.20	1.5	0.35	2.0	0.55	2.0	0.20
6	1.8	0.10	1.2	0.05	1.2	0.15	1.2	0.20	1.8	0.30	0.6	0.10	1.8	0.35	1.8	0.20	1.8	0.30	2.4	0.45	2.4	0.25
7	2.1	0.10	1.4	0.10	1.4	0.10	1.4	0.20	2.1	0.35	0.7	0.10	2.1	0.45	2.1	0.20	2.1	0.20	2.8	0.30	2.8	0.20
8	2.4	0.05	1.6	0.05	1.6	0.20	1.6	0.25	2.4	0.20	0.8	0.05	2.4	0.30	2.4	0.15	2.4	0.15	3.2	0.20	3.2	0.15
9	2.7	0.05	1.8	0.05	1.8	0.05	1.8	0.25	2.7	0.15	0.9	0.05	2.7	0.15	2.7	0.05	2.7	0.05	3.6	0.05	3.6	0.05
Right Bank	3.0	0.00	2.0	0.00	2.0	0.00	2.0	0.00	3.0	0.00	1.0	0.00	3.0	0.00	3.0	0.00	3.0	0.00	4.0	0.00	4.0	0.00
Feature Type	riffle	riffle	pool	pool	pool	pool	pool	pool	riffle	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball      Date: 10/25/07

WBID # 912  
 Site # 4

### Field Data Sheets For Recreational Use Stream Surveys

#### Data Sheet B-Site Characterization

Date & Time:	10/26/07	9:51	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		Weaver School
Current Weather Conditions:	cloudy, light rain		Facility Name: Odessa Municipal WWTF
Weather conditions for the past 10 days:	1.96 inches		Permit Number: MO 0026387
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

#### Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0424431	4313853	6.3
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0424628	4313876	5.1

#### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
43	Downstream	44	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				



WBID # 912  
Site # 4

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B- Site Characterization (Continued)**

**Surrounding Conditions:**

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

**Evidence of Human Use:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: trash (car battery)				

**Substrate:**

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
10			20	70	

**Aquatic Vegetation:**

none
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**Water Characteristics:**

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 912  
Site # 4

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B - Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

none

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: Aaron Ball Date of Survey: 10/26/2007

Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Waterbody ID: <u>912</u> Site #: <u>4</u>  Estimated Channel Incision: <u>4.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0424431</u> UTM Y: <u>4313853</u> +/- <u>6.3</u> (meters) <b>11</b> UTM X: <u>0424628</u> UTM Y: <u>4313876</u> +/- <u>5.1</u> (meters)  Average Stream Width: <u>6</u> (meters)                      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)                      (20x average stream width)  Field Staff: <u>Aaron Ball, Drew Dodson</u>	<b>Dissolved Oxygen</b>  Date: <u>10/26/07</u> Time: <u>9:51</u>  Dissolved Oxygen: <u>11.8</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>10.3</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.10	0.5	0.20	0.5	0.20	0.3	0.10	0.4	0.10	0.5	0.40	0.4	0.50	0.5	0.45	0.4	0.10	0.5	0.20	0.6	0.05
2	1.0	0.20	1.0	0.60	1.0	0.30	0.6	0.30	0.8	0.15	1.0	0.80	0.8	0.70	1.0	0.65	0.8	0.15	1.0	0.40	1.2	0.05
3	1.5	0.20	1.5	0.75	1.5	0.40	0.9	0.40	1.2	0.15	1.5	0.80	1.2	0.80	1.5	0.70	1.2	0.25	1.5	0.50	1.8	0.05
4	2.0	0.40	2.0	0.90	2.0	0.45	1.2	0.40	1.6	0.10	2.0	0.85	1.6	0.90	2.0	0.70	1.6	0.20	2.0	0.55	2.4	0.25
5	2.5	0.50	2.5	0.85	2.5	0.50	1.5	0.50	2.0	0.10	2.5	0.80	2.0	0.90	2.5	0.60	2.0	0.20	2.5	0.50	3.0	0.40
6	3.0	0.45	3.0	0.70	3.0	0.60	1.8	0.60	2.4	0.10	3.0	0.60	2.4	0.80	3.0	0.30	2.4	0.30	3.0	0.55	3.6	0.55
7	3.5	0.45	3.5	0.40	3.5	0.40	2.1	0.70	2.8	0.20	3.5	0.60	2.8	0.70	3.5	0.40	2.8	0.30	3.5	0.40	4.2	0.50
8	4.0	0.40	4.0	0.25	4.0	0.20	2.4	0.60	3.2	0.20	4.0	0.40	3.2	0.50	4.0	0.30	3.2	0.30	4.0	0.20	4.8	0.55
9	4.5	0.20	4.5	0.10	4.5	0.10	2.7	0.45	3.6	0.15	4.5	0.30	3.6	0.10	4.5	0.20	3.6	0.15	4.5	0.20	5.4	0.60
Right Bank	5.0	0.00	5.0	0.00	5.0	0.00	3.0	0.00	4.0	0.00	5.0	0.00	4.0	0.00	5.0	0.00	4.0	0.00	5.0	0.00	6.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball                      Date: 10/26/07

WBID # 912  
 Site # 5

**Field Data Sheets For Recreational Use Stream Surveys**

**Data Sheet B-Site Characterization**

Date & Time:	10/26/07	9:20	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		Oakland School
Current Weather Conditions:	cloudy, light rain		Facility Name: Odessa Municipal WWTF
Weather conditions for the past 10 days:	1.96 inches		Permit Number: MO 0026387
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

**Site Location:**

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0427055	4314511		5.4	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0427296	4314403		4.8	

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
41	Upstream	42	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed:**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 912  
Site # 5

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B- Site Characterization (Continued)**

**Surrounding Conditions:**

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

**Evidence of Human Use:**

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

**Substrate:**

% Cobble 20	% Gravel	% Sand	% Silt	% Mud/Clay 80	% Bedrock
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**Aquatic Vegetation:**

none
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**Water Characteristics:**

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 912  
Site # 5

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B - Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

none

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: Aaron Ball Date of Survey: 10/26/2007

Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Waterbody ID: <u>912</u> Site #: <u>5</u>  Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0427055</u> UTM Y: <u>4314511</u> +/- <u>5.4</u> (meters) <b>11</b> UTM X: <u>0427296</u> UTM Y: <u>4314403</u> +/- <u>4.8</u> (meters)  Average Stream Width: <u>5</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>Aaron Ball, Drew Dodson</u>	<b>Dissolved Oxygen</b>  Date: <u>10/26/07</u> Time: <u>9:20</u>  Dissolved Oxygen: <u>14.9</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>10.5</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.40	0.4	0.25	0.7	0.15	0.6	0.20	0.6	0.30	0.6	0.30	0.5	0.60	0.7	0.40	0.6	0.55	0.6	0.20	0.6	0.40
2	1.0	0.50	0.8	0.40	1.4	0.20	1.2	0.25	1.2	0.50	1.2	0.40	1.0	0.80	1.4	0.70	1.2	1.00	1.2	0.45	1.2	0.60
3	1.5	0.50	1.2	0.50	2.1	0.35	1.8	0.40	1.8	0.55	1.8	0.30	1.5	0.70	2.1	0.70	1.8	1.00	1.8	0.65	1.8	0.60
4	2.0	0.55	1.6	0.55	2.8	0.35	2.4	0.50	2.4	0.55	2.4	0.35	2.0	0.80	2.8	0.80	2.4	1.00	2.4	0.80	2.4	0.60
5	2.5	0.50	2.0	0.50	3.5	0.40	3.0	0.50	3.0	0.55	3.0	0.40	2.5	0.80	3.5	0.80	3.0	1.00	3.0	0.85	3.0	0.95
6	3.0	0.40	2.4	0.35	4.2	0.35	3.6	0.55	3.6	0.55	3.6	0.65	3.0	0.80	4.2	0.72	3.6	1.00	3.6	0.80	3.6	0.90
7	3.5	0.35	2.8	0.25	4.9	0.25	4.2	0.50	4.2	0.50	4.2	0.65	3.5	0.60	4.9	0.65	4.2	1.00	4.2	0.65	4.2	0.75
8	4.0	0.30	3.2	0.15	5.6	0.20	4.8	0.45	4.8	0.45	4.8	0.55	4.0	0.45	5.6	0.60	4.8	1.00	4.8	0.55	4.8	0.55
9	4.5	0.20	3.6	0.05	6.3	0.15	5.4	0.15	5.4	0.40	5.4	0.25	4.5	0.15	6.3	0.30	5.4	0.70	5.4	0.30	5.4	0.40
Right Bank	5.0	0.00	4.0	0.00	7.0	0.00	6.0	0.00	6.0	0.00	6.0	0.00	5.0	0.00	7.0	0.00	6.0	0.00	6.0	0.00	6.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)  
 All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball      Date: 10/26/07

WBID # 912  
 Site # 6

**Field Data Sheets For Recreational Use Stream Surveys**

**Data Sheet B-Site Characterization**

Date & Time:	10/26/07	8:10	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		Highway H
Current Weather Conditions:	cloudy	Facility Name:	Odessa Municipal WWTF
Weather conditions for the past 10 days:	1.96 inches	Permit Number:	MO 0026387
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

**Site Location:**

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0429136	4313667		6.3	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0429405	4313739		9.3	

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
39	Downstream	40	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed:**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				



WBID # 912  
Site # 6

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B- Site Characterization (Continued)**

**Surrounding Conditions:**

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

**Evidence of Human Use:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

**Substrate:**

% Cobble 15	% Gravel	% Sand	% Silt	% Mud/Clay 85	% Bedrock
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**Aquatic Vegetation:**

none
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**Water Characteristics:**

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 912  
Site # 6

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B - Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

none

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: Aaron Ball Date of Survey: 10/26/2007

Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Waterbody ID: <u>912</u> Site #: <u>6</u>  Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0429136</u> UTM Y: <u>4313667</u> +/- <u>6.3</u> (meters) <b>11</b> UTM X: <u>0429405</u> UTM Y: <u>4313739</u> +/- <u>9.3</u> (meters)  Average Stream Width: <u>7</u> (meters)                      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)                      (20x average stream width)  Field Staff: <u>Aaron Ball, Drew Dodson</u>	<b>Dissolved Oxygen</b>  Date: <u>10/26/07</u> Time: <u>8:10</u>  Dissolved Oxygen: <u>15.2</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>10.3</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.3	0.20	0.9	0.20	0.6	0.20	1.3	0.15	1.2	0.10	1.2	0.10	1.2	0.40	1.0	0.75	0.8	0.90	0.8	0.20	1.0	0.35
2	2.6	0.20	1.8	0.30	1.2	0.35	2.6	0.30	2.4	0.25	2.4	0.20	2.4	0.55	2.0	1.00	1.6	1.00	1.6	0.80	2.0	0.70
3	3.9	0.25	2.7	0.40	1.8	0.40	3.9	0.60	3.6	0.15	3.6	0.20	3.6	0.80	3.0	1.00	2.4	1.00	2.4	1.00	3.0	0.80
4	5.2	0.20	3.6	0.55	2.4	0.40	5.2	0.55	4.8	0.35	4.8	0.20	4.8	0.95	4.0	1.00	3.2	1.00	3.2	1.00	4.0	0.85
5	6.5	0.40	4.5	0.80	3.0	0.40	6.5	0.50	6.0	0.30	6.0	0.25	6.0	1.00	5.0	1.00	4.0	1.00	4.0	1.00	5.0	0.95
6	7.8	0.70	5.4	0.72	3.6	0.40	7.8	0.45	7.2	0.35	7.2	0.65	7.2	1.00	6.0	1.00	4.8	1.00	4.8	1.00	6.0	1.00
7	9.1	0.55	6.3	0.40	4.2	0.35	9.1	0.65	8.4	0.50	8.4	0.70	8.4	1.00	7.0	1.00	5.6	1.00	5.6	1.00	7.0	1.00
8	10.4	0.20	7.2	0.20	4.8	0.20	10.4	0.60	9.6	0.50	9.6	0.80	9.6	0.70	8.0	1.00	6.4	1.00	6.4	0.75	8.0	0.95
9	11.7	0.20	8.1	0.15	5.4	0.10	11.7	0.60	10.8	0.50	10.8	0.30	10.8	0.70	9.0	0.85	7.2	0.90	7.2	0.40	9.0	0.50
Right Bank	13.0	0.00	9.0	0.00	6.0	0.00	13.0	0.00	12.0	0.00	12.0	0.00	12.0	0.00	10.0	0.00	8.0	0.00	8.0	0.00	10.0	0.00
Feature Type <small>(rifle, run, or pool)</small>	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball                      Date: 10/26/07

**WBID# 0912 Davis Creek**



**Site# 1 Photo ID# 47, Upstream**



**Site# 1 Photo ID# 48, Downstream,**



**Site#2 Photo ID# 46, Upstream**



**Site# 2 Photo ID# 45, Downstream**



**WBID# 0912 Davis Creek**



**Site# 3 Photo ID# 36, Upstream**



**Site# 3 Photo ID# 38, Downstream,**



**Site#3 Photo ID# 37, Livestock watering**



**Site# 4 Photo ID# 43, Downstream**



**WBID# 0912 Davis Creek**



**Site# 4 Photo ID# 44, Upstream**



**Site# 5 Photo ID# 42, Downstream,**



**Site# 5 Photo ID# 41, Upstream**



**Site# 6 Photo ID# 39, Downstream**

**WBID# 0912 Davis Creek**



**Site# 6 Photo ID# 40, Upstream**